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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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H.C. PARK & ASSOCIATES, PLC
8500 LEESBURG PIKE
SUITE 7500
VIENNA, VA 22182

EXAMINER	
HINES, ANNE M	

ART UNIT	PAPER NUMBER
2879	

DATE MAILED: 12/22/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/700,633	CHOI, SEO-YOUNG	
	Examiner	Art Unit	
	Anne M. Hines	2879	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *23 November 2005*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-7 and 9-20* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-7 and 9-20* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

The amendment filed on November 23, 2005, has been entered and overcomes the 102 rejections.

Claims 1-7 and 9-20 are pending in the instant application.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-7 and 9-20 rejected under 35 U.S.C. 103(a) as being unpatentable over Juestel et al. (US 2002/0113552).

Regarding claims 1, 11, 13, 16, and 19 Juestel teaches a plasma display panel comprising a fluorescent layer (Fig. 1,9) that includes a red phosphor pattern (Page 1, Paragraph [0003]), a green phosphor pattern (Page 1, Paragraph [0003]), and a blue phosphor pattern (Page 1, Paragraph [0003]), the red phosphor pattern containing $Y(V,P)O_4$:Eu and $(Y,Gd)BO_3$:Eu (Page 2, Paragraphs [0023]-[0024]), and wherein the plasma display panel is without a color-compensating filter (Juestel does not disclose a color-compensating filter). Juestel also teaches wherein the red phosphor pattern contains $Y(V,P)O_4$:Eu and $(Y,Gd)BO_3$:Eu of "up to 100% of $Y(V,P)O_4$:Eu" or "up to 100% of $(Y,Gd)BO_3$:Eu" (Page 3, Paragraph [0041]). And, Juestel teaches "the use of

two phosphors which emit the same color in one and the same phosphor layer makes it possible to reduce or mutually compensate the undesirable properties of the phosphors" (Page 1, Paragraph [0010]). Juestel fails to teach wherein the red color purity ranges from 0.657 to 0.670 for an x chromaticity coordinate value and from 0.322 to 0.332 for a y chromaticity coordinate value, as in claims 1 and 11. Juestel also fails to teach wherein the red color purity ranges from 0.660 to 0.670 for an x chromaticity coordinate value and from 0.322 to 0.332 for a y chromaticity coordinate value, as in claim 16. However, the chromaticity values for $Y(V,P)O_4$:Eu are: x=0.662, y=0.328; this is shown in Table 3. The chromaticity values for $(Y,Gd)BO_3$:Eu are: x=0.641, y=0.356; this property is disclosed by the Kasei-Optonix website (of record). Since the properties of the red phosphor pattern depend on the quantity of each phosphor in the layer (Fig. 3, Table 5) it would be obvious to one of ordinary skill in the art to modify the percentages of $Y(V,P)O_4$:Eu and $(Y,Gd)BO_3$:Eu in the phosphor layer of Juestel to get the chromaticity coordinates specified in claims 1, 11, and 16.

Regarding claims 4, 12, 14, 17, and 18 Juestel teaches a fluorescent layer that includes a red phosphor pattern (Page 1, Paragraph [0003]), a green phosphor pattern (Page 1, Paragraph [0003]), and a blue phosphor pattern (Page 1, Paragraph [0003]), wherein the plasma display panel is without a color-compensating filter (Juestel does not disclose a color-compensating filter), the red phosphor pattern contains $Y(V,P)O_4$:Eu and $(Y,Gd)BO_3$:Eu (Page 2, Paragraphs [0023]-[0024]). Juestel teaches wherein the red phosphor pattern contains $Y(V,P)O_4$:Eu and $(Y,Gd)BO_3$:Eu of "up to 100% of $Y(V,P)O_4$:Eu" or "up to 100% of $(Y,Gd)BO_3$:Eu" (Page 3, Paragraph [0041]).

Juestel also teaches "the use of two phosphors which emit the same color in one and the same phosphor layer makes it possible to reduce or mutually compensate the undesirable properties of the phosphors" (Page 1, Paragraph [0010]). Juestel fails to teach wherein the red light afterglow decay time is 4.0-8.8 ms, as in claims 4 and 12. Juestel also fails to teach wherein the red light afterglow decay time is 4.0-8.0 ms, as in claim 17. However, the afterglow decay value for $Y(V,P)O_4$:Eu is 3.5 ms; this is shown in Table 3. The afterglow decay value for $(Y,Gd)BO_3$:Eu is 11 ms; this property is disclosed by the Kasei-Optonix website (of record). Since the properties of the red phosphor pattern depend on the quantity of each phosphor in the layer it would be obvious to one of ordinary skill in the art to modify the percentages of $Y(V,P)O_4$:Eu and $(Y,Gd)BO_3$:Eu in the phosphor layer of Juestel to get the afterglow decay values specified in claims 4, 12, and 17.

Regarding claims 2, 5, and 15 Juestel further discloses wherein the amount of $Y(V,P)O_4$:Eu is in the range of 20-80% by weight based on the total weight of $Y(V,P)O_4$:Eu and $(Y,Gd)BO_3$:Eu (Page 3, Paragraph [0041]).

Regarding claims 3, 6, and 20 Juestel further discloses wherein the amount of $Y(V,P)O_4$:Eu is in the range of 50-80% by weight based on the total weight of $Y(V,P)O_4$:Eu and $(Y,Gd)BO_3$:Eu (Page 3, Paragraph [0041]).

Regarding claims 7 and 9, Juestel fails to teach wherein the red color purity ranges from 0.657 to 0.670 for an x chromaticity coordinate value and from 0.322 to 0.332 for a y chromaticity coordinate value, as in claim 7. Juestel also fails to teach wherein the red color purity ranges from 0.660 to 0.670 for an x chromaticity coordinate

value and from 0.322 to 0.330 for a y chromaticity coordinate value, as in claim 9. However, it would be obvious to one of ordinary skill in the art to modify the percentages of $Y(V,P)O_4$:Eu and $(Y,Gd)BO_3$:Eu in the phosphor layer of Juestel to get the chromaticity coordinates specified in claims 7 and 9. See claim 1 rejection for motivation.

Regarding claim 10, Juestel fails to teach wherein the red light afterglow decay time is 4.0-8.0 ms. However, it would have been obvious to one of ordinary skill in the art to modify the percentages of $Y(V,P)O_4$:Eu and $(Y,Gd)BO_3$:Eu in the phosphor layer of Juestel to get the afterglow decay values specified. See claim 4 rejection for motivation.

Response to Arguments

Applicant's arguments filed on November 23, 2005 have been fully considered but they are not persuasive.

Applicant argues that the Examiner has improperly combined Juestel with Kasei-Optonix website in rejecting claims 7-10, 12-15, and 17-20. Applicant argues that the reference is undated, and therefore, does not have the proper priority date for a 103 rejection.

Applicant has also argued that the Examiner has not established a prima facie case of obviousness. Applicant argues that in order for a prima facie case of obviousness to exist there must be a motivation to modify reference teachings and there must be a reasonable expectation of success found in the prior art.

The Examiner respectfully disagrees.

The Kasei-Optonix website is provided merely to give evidence of inherent material properties for the red phosphor $(Y,Gd)BO_3$:Eu. In reaching an unpatentability determination based upon a theory of inherency, the Examiner must provide basis in fact and/or technical reasoning to reasonably support the determination that the allegedly inherent characteristic is necessarily possessed by the applied prior art. See *Ex parte Levy*, 17 USPQ2d 1461, 1463-64 (Bd. Pat. App. & Int. 1990). Also see *Ex parte Skinner*, 2 USPQ2d 1788, 1789 (Bd. Pat. App. & Int. 1986). In the instant application the inherency position is reasonably contemplated since the red phosphors, disclosed in the applied reference, contain the red phosphors disclosed by the applicants. See *In re Papesch*, 315 F.2d 381, 391 137 USPQ 43, 51 (CCPA 1963) (a compound and its properties are inseparable). Also see *In re Spada*, 911 F.2d 705, 708, 15 USPQ2d 1655, 1657 (fed. Cir. 1990) (discovery of new property or use of previous known composition, even if unobvious from prior art, cannot impart patentability to claims to the known composition).

Where the claimed and prior art products are identical or substantially identical, the Patent and Trademark Office can require an applicant to prove that the prior art products do not necessarily or inherently posses the characteristics of the claimed product. Whether the rejection is based on "inherency" under 35 U.S.C. § 102, on "prima facie obviousness" under 35 U.S.C. § 103, jointly or alternatively, the burden of proof is the same, and its fairness is evidenced by the inability of the Patent and

Trademark Office to manufacture products or to obtain and compare prior art products. *In re Best*, 562 F.2d 1252, 1255, 195 USPQ 430, 433-434 (CCPA 1977).

Additionally, the cited motivation from Juestel, "the use of two phosphors which emit the same color in one and the same phosphor layer makes it possible to reduce or mutually compensate the undesirable properties of the phosphors" (Page 1, Paragraph [0010]), provides both a motivation to modify and a reasonable expectation of success.

Applicant has argued, regarding claims 7, 9, 13, 15, 19, and 20, that the only example of Juestel that falls within the claimed color purity ranges is the point which represents 100% $Y(V,P)O_4$:Eu.

The Examiner respectfully disagrees, both applicant's claimed and Juestel's disclosed phosphors (i.e. $(Y,Gd)BO_3$:Eu and $Y(V,P)O_4$:Eu)) are broad and do not define the mole fraction of the components or the charge of the activator (for example claimed phosphor $Y(V,P)O_4$:Eu includes YVO_4:Eu). Also, $Y_{0.65}Gd_{0.35}BO_3:Eu^{3+}$ (x,y)=(0.65,0.35) (Phosphor Handbook) is included in the group of phosphors that fit both the claimed and disclosed phosphor $(Y,Gd)BO_3$:Eu. Since one of ordinary skill in the art would interpret both the claimed and disclosed phosphor combinations to include any number of phosphors known in the art, it is reasonably contemplated that one of ordinary skill in the art would select red phosphors for combination based on the motivation provided by Juestel (see above). Therefore, the Examiner considers Juestel's disclosure of the combination of $(Y,Gd)BO_3$:Eu and $Y(V,P)O_4$:Eu from 0% to 100% of either phosphor to fully cover the ranges of chromaticity claimed. See response to argument concerning material properties and motivation above.

Applicant argues that it would not have been obvious to one skilled in the art to modify percentages of the two red phosphor components to achieve coordinates that exceed the coordinates achieved by Juestel with 100%.

The Examiner respectfully disagrees, a prior art reference is not required to cover the entire range of claimed values in order be considered anticipatory. The prior art reference must only fall within the claimed range in order to be considered anticipatory.

Applicant argues, regarding claims 7, 9, 13, 15, 19, and 20, that Juestel does not disclose a chromaticity coordinate for plural phosphors that falls within the claimed range of the applicant. And thus, there is no overlap of ranges to support a prima facie case of obviousness.

The Examiner respectfully disagrees, one of ordinary skill in the art would reasonably contemplate that the chromaticity x and y values for plural phosphors would fall between the chromaticity x and y values for the individual phosphors; this is shown by Juestel's Figure 3. Further, by examining Figure 3 and the chromaticity x and y values for the combined phosphors it is obvious to one of ordinary skill in the art that the chromaticity values many of the plural phosphor combinations disclosed by Juestel (0 to 100% of either phosphor) would fall into the claimed range of chromaticity values. And, a prior art reference is not required to cover the entire range of claimed values in order be considered anticipatory. The prior art reference must only fall within the claimed range in order to be considered anticipatory.

Applicant argues, regarding claims 10, 12, 14, and 17, that Juestel does not disclose any afterglow decay times for the combined phosphors, and thus there is no potential for overlapping ranges to support a prima facie case of obviousness.

The Examiner respectfully disagrees; see above response to arguments concerning the inherency of material properties, overlapping ranges, and prima facie obviousness.

Applicant argues, regarding claims 10, 12, 14, and 17, that Juestel does not disclose the afterglow times there was no reasonable expectation of success for achieving the claimed ranges with plural phosphors, and therefore fails to establish a prima facie case of obviousness.

The Examiner respectfully disagrees; see above response to arguments concerning the inherency of material properties, overlapping ranges, and prima facie obviousness.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not

mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Anne M. Hines whose telephone number is (571) 272-2285. The examiner can normally be reached on Monday through Friday from 8:00-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nimesh Patel can be reached on (571) 272-2457. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Anne M Hines
Patent Examiner
Art Unit 2879

12/15/05

12/15/05
MARICELI SANTIAGO
PRIMARY EXAMINER